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Priming And Pregermination

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as the seed sits in water it releases exudate, a natural chemical which actually works as an inhibitor to germination."

The other key to success, Spardy asserts, is oxygen and oxygen circulation. It's critical to ensure oxygen reaches all levels of seed in the tank — without it, the only oxygen seed at the middle and bottom levels will receive is that from the water. In his work at Cal Poly, an aquarium pump was used to circulate oxygen in the seed as it sat in its water-filled containers. If you don't have oxygen pumping through the pregermination tank, it's important to at least try to move the seed around by stirring in the hope of moving seed at the bottom to the top.

What kind of "speed" advantage can pregerminated seed offer? Under optimum conditions at Cal Poly, Spardy maintains, they were able to reduce the normal germination of perennial ryegrass, with adequate conditions, from four to seven days to 36 hours. Keep in mind, however, results can vary widely with con-

ditions and your familiarity with pregermination techniques.

"Seed pregermination is something you have to play with," says Spardy. "But it's a viable tool for the sports turf industry. The biggest problem can be trying to apply the pregerminated seed out in the field, so most people use a carrier like sand, topdressing, or an organic fertilizer. Another potential problem is that if the cotyledon is too long, it can be damaged, so it's very important to watch it as it matures."

Applied Technique

Any pregermination strategy must be adjusted or "customized" to the situation at-hand. Don Follette, superintendent of grounds at Sun Devil Stadium in Tempe, AZ, home of Arizona State University and the NFL Arizona Cardinals (the team name has been formally changed), uses a process he learned from NFL turf consultant George Toma. (Follette has worked with Toma on the last four Super Bowls.)

The natural surface at Sun Devil Stadium is Tifway 419 bermuda. Follette describes it as a flat, sand-based field with

excellent drainage and above- and below-ground irrigation. The field hosts 20 to 22 games a season, as well as the occasional rock concert.

"We pregerminate 450 to 500 pounds of a ryegrass blend for each game," he explains. "We use 55-gallon drums that hold about 150 pounds of seed apiece, fill it with water and PBI/Gordon Bov-A-Mura 5-0-0 liquid fertilizer, using about one-quart per drum. We fill it in the morning and add a wetting agent, and let it sit in a warm place indoors, with a temperature of 72 to 75 degrees. You don't want the seed to get too cold. At the end of the day we drain the liquid, aerify the seed with an air hose, and then refill the drum with water. We drain, aerify, and refill it the next morning, and then drain, refill, and aerify it a third time. Then we leave it overnight again. The next morning we drain it and spread it out on the clean floor to dry."

To provide a carrier for the pregerminated seed so it can be spread, Follette mixes it with Milorganite at a rate of 50 pounds of seed to 80 pounds of the fertilizer, turning the mixture over with a shovel to blend it.

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"Mixing the seed with Milorganite is a good 'trick' to making it spreadable," says Follette. "The combination gives it body; otherwise, the seed would just stick to the spreader."

Using a broadcast spreader, pregerminated seed is applied to the field at Sun Devil Stadium after every game. (In "problem areas," the seed is hand-spread.) Following seeding, the field is lightly topdressed with a very thin bead of sand, says Follette, "just to knock the seed down past the grass blades." In two days, he says, they see green shoots and have healthy grass within two weeks.

Typically, Follette applies pregerminated seed from September through January, when the field's bermudagrass starts to go dormant. "The pregerminated seed gives me a quicker start, so I have some semblance of a plant growing by the time I get to the next game. The only thing we have to watch out for is fungus, because the seed is so wet. We treat the field with Scotts fungicide, typically six to eight applications in the winter and fall."

Reasonable Expectations

It's not hard to find competent sports turf managers who tried pregermination and were less than pleased with the results. The shortcomings of the procedure in a given instance may have as much to do with field use frequency as they do with any particular pregermination technique. In a high-use situation, where the turf has little chance for recovery, explains Steve Wightman, stadium turf manager at San Diego Jack Murphy Stadium, you may be better off investing time and money into aeration and fertilization than in pregerminating seed. For his part, Wightman pregerminates seed approximately once a year.

"My philosophy has always been to have seed on the playing field," he explains. "When conditions are right, it will germinate. That has worked best for me, rather than pregerminating. The bottom line is that you always have a very fragile, immature plant trying to grow under the most adverse conditions. Your success with pregermination, then, might be very limited down the center of a high-use football field. In high-use conditions, the results of pregermina-

tion can be rather limited, so it may behoove you to put that money into a good fertility program. I've always been a big proponent of overseeding in general, but there are times when it can be difficult to reap its benefits."

Pregermination and priming are no substitute for giving a field a chance to recover, and unrealistic expectations will lead to certain disappointment. If you're trying it for the first time, contact other professionals in your area or your local turfgrass specialist to find out if your situation is a good candidate for the process. No doubt, pregermination will take some tinkering before you get it right, and you may find the effort outweighs the results. Yet in the right situation, seed pregermination is useful in maximizing time, a commodity that is always in short supply for sports turf managers. □

Editor's Note: For more information on seed priming and pregermination techniques, see sportsTURF February, 1994: "Speed Seed Outpaces Pregermination And Limited Priming" and sportsTURF September, 1992: "Limited Water Seed Priming."

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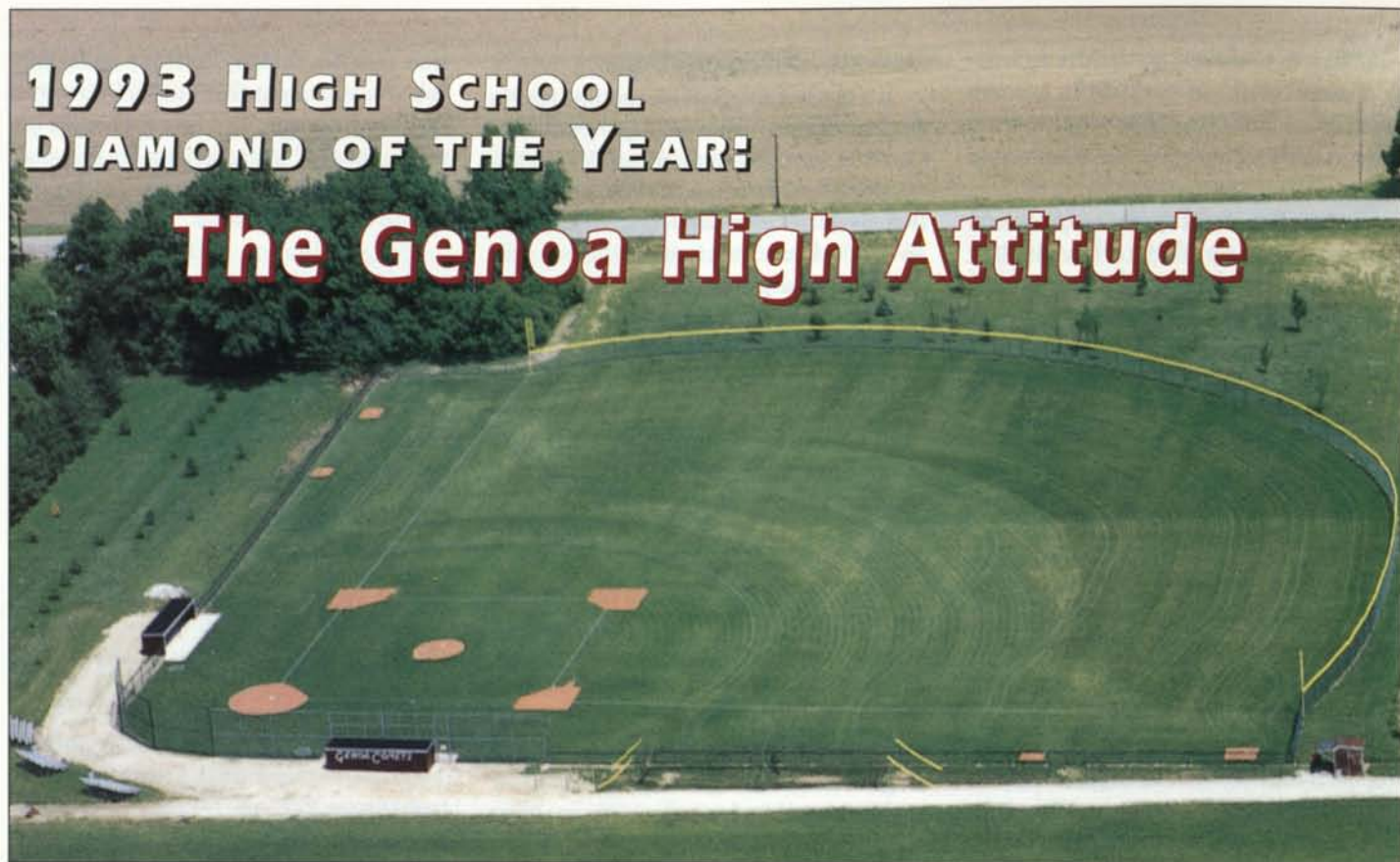
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1993 HIGH SCHOOL DIAMOND OF THE YEAR:

The Genoa High Attitude



Aerial view of the renovated Genoa High School baseball diamond, home of the Comets.

By Bob Tracinski

Can a graffiti-covered, weed-infested, worn-out baseball diamond be converted into a "Field of Dreams?" The answer, at least for Genoa High School in Genoa, OH, is yes, *with the right attitude.*

Positive attitude was the driving force behind coach Jeff Thompson's two-phase, dream renovation plan. That same attitude launched a community-wide program that turned the baseball field at Genoa High School into the 1993 High School Diamond of the Year.

Thompson was deeply committed to Genoa and its baseball program. He'd been the assistant varsity coach at the school for seven years. When varsity coach Bob Baird resigned in 1990 after 25 years in the position, Thompson stepped up to the challenge.

And what a challenge it was.

Although the field was well-constructed initially in 1976 and Baird had kept it in good shape, there came a season where circumstances combined to cut off field care for a full summer and fall. Even with sod only a couple of years old at the time, an extremely dry season, hordes of turf-eating insects, and extensive vandalism reduced the field to a nearly unplayable eyesore. The skinned



The Comets, pictured here at Three Rivers Stadium during a high school tournament, pitch in on field maintenance at Genoa High.

(Below) The field's skinned areas and mound were rebuilt with a mix designed to resemble red Georgia clay.

areas were rock-hard, crusted, and filled with weeds. Weeds also climbed halfway up the fences and crowded out the few tufts of live grass in the infield and outfield sections. The dugouts and scoreboard were covered with profane graffiti.

Blueprint For A Rebuilder

Thompson well-understood the connection between a quality field and quality play. He's played baseball for most of his life, beginning with Little League. Thompson attended the College of South Idaho, a junior college, and then moved on to Mercer in Macon, GA, a four-year Division I school, where he played baseball for 3-1/2 years. He was drafted in his junior year by the Baltimore Orioles, but opted to complete his senior year. He was then drafted by the Toronto



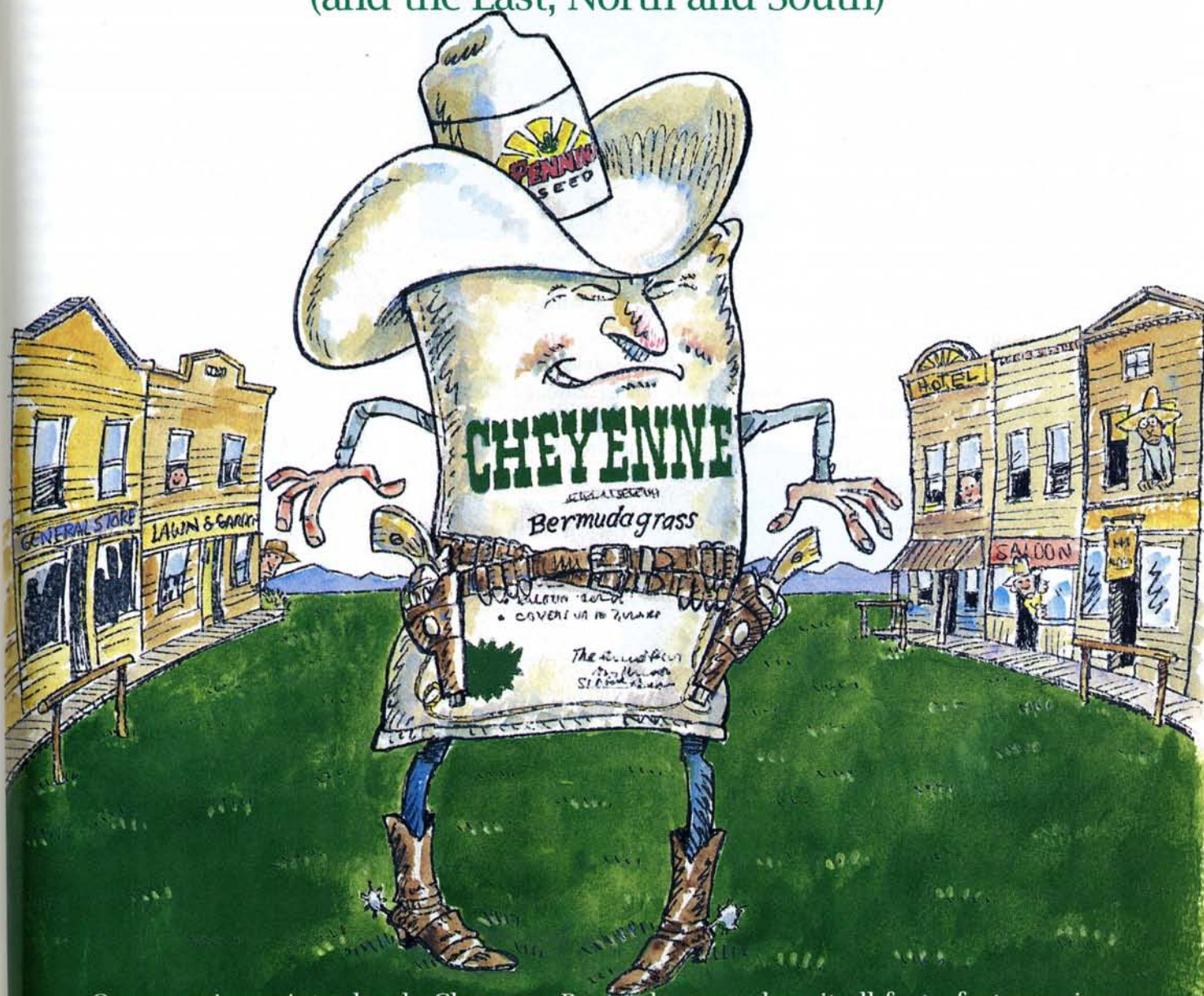
Blue Jays and played two seasons in the minor league.

In addition to putting in hours on the field as a player, Thompson started working part-time during his sophomore year in high school for Paul Riser, then-recreation director for the Oregon Recreation Department. Riser assigned Thompson to the tasks of field building and maintenance.

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Diamond of the Year

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"I worked on fields part-time for nearly 15 years," says Thompson. "Riser provided me with hands-on training in the basics of field construction and maintenance, and the opportunity to see the way quality fields affect play and player safety."

After being cut by the Blue Jays, Thompson moved on to a teaching and coaching position with the Genoa School District. As a certified teacher in physical education and health, and with guidance counselor credentials, Thompson has filled varying slots with the schools. For four years, he taught physical education at the kindergarten to sixth-grade levels. For another four years, he taught physical education at the high school and served as a part-time counselor at the junior high. Currently, he's teaching physical education to seventh and eighth graders at the junior high, tenth graders at the high school, and counseling when he can work it into his schedule.

These moves within the system have benefitted the baseball program, Thompson observes. While it's "cool" for the younger kids to have a coach as a teacher, it also



Comet's coach Jeff Thompson (left) with Pittsburgh Pirates manager Jim Leyland.

strengthens the connection when the idea of going out for baseball first hits. Thompson encourages that early connection by holding pitching and catching camps for youngsters in grades four through eight. This system-wide activity also makes him a well-known figure in the community and showcases his commitment to a quality program for student athletes.

The Plan

After assessing the condition of the field, Thompson approached Athletic Director Jeff Bunck with a two-phase plan to ensure player safety and protect the school district's investment in the field. Phase I included basic clean-up and field reconstruction. Since the infield would have to be torn up, Phase I included an underground irrigation system for that area.

Phase II called for adding green mesh to the outfield fence for better visibility and greater field definition, and artificial turf in front of the dugouts and for the on-deck circles. These steps have been completed.

Still to come in Phase II are a new scoreboard for left center field, a two-story press box/concession stand combination to be located behind home plate, an underground irrigation system in the outfield, and a warning track.

Bunck took the plan to the school administration and to the school's boosters to get the ball rolling. When current Athletic Director Dennis Spisak came on board, he continued to give full support to the program.

People were skeptical when Thompson first proposed the two-phase plan. The

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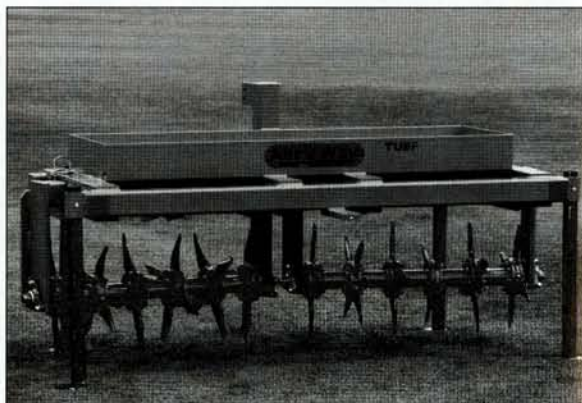
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original outlay of dollars sounded expensive, but the idea of saving money with a lower long-term budget and reduced liability exposure were strong selling points. Once the original concept was sold, there was nothing but positive response from the entire school system and surrounding community.

Looking ahead, the Board of Education decided to run a four-inch water line from the school to the field to supply water to the football, softball, and track complex, rather than attempt to continue operating the existing well system. The new pipe is sufficient to support the infield and projected outfield irrigation systems, as well as supply water for the athletes, and may eventually support the water needs of a stadium — still in the “dream” stages. This all fits into the plan Thompson was working hard to sell, a plan that was, in essence, an investment in the future.

The athletic director, athletic department, and boosters agreed to fund an infield underground irrigation system using Toro 700 series rotary pop-up heads. Costs were split equally between the athletic department and boosters.

Assistant coaches Keith Belcik and Gary Nissen also share Thompson's commitment to the field. Belcik and Thompson have known each other since kindergarten and played baseball together throughout their school years. Belcik played at the professional level for two years with the New York Mets farm club. Nissen, a graduate of Malone College in Ohio, is a Genoa High alumnus and was the team's starting pitcher as a senior in 1988. He lives directly across from the school, so he ends up as the “prime monitor” of the irrigation system.

Putting It Together

When the field was initially constructed in 1976, an underlying tile drainage system with a stone and sand base was installed. This tile system runs beneath the field with extensions to a neighborhood creek for controlled removal of excess water. Because of this system, field drainage is excellent.

In the fall of 1991, the field's existing infield soil was removed and trenches were put in for the irrigation system. The four-inch pipe from the school to the field and a two-inch line to the outfield will be used to operate a water wheel until the Phase II outfield irrigation system can be installed. Don Williams, a Genoa High graduate and owner of DW Greenlawn, handled the renovation, working closely

with Thompson each step of the way. Once the excavation was completed, the irrigation system was installed and the soil was brought back and graded with a 1-inch to 100-foot slope.

The weeds and remaining grass in the outfield were chemically eliminated and low spots were filled. Then, both the infield and outfield were overseeded with approximately 200 pounds of Scott's Pro-Turf Mix, a combination of bluegrass and perennial ryegrass varieties. To keep as even a surface as possible and avoid ridges, Thompson left an unseeded area

equal to a five-foot radius around the mound, and a two-foot radius around home plate. The field was fertilized and then topdressed with a layer of clean straw to discourage hungry birds that gather in the area.

At that point, fall weather turned wintery so quickly that Thompson realized it would take the entire next year to get the turf established. Again, looking to the future, the administration and student athletes accepted the decision and agreed to a full year of “away” games.

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Diamond of the Year

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Thompson and Chris Mathews, a former Genoa High baseball player and current trainer for the Ohio State University football teams, directed the final stages of renovation. "Chris is as picky as I am," says Thompson.

For the precise dimensions of cut-outs around the mound, home plate, and the bases, Thompson had contacted the Columbus Clippers, the Yankees farm club. They wanted to create an infield look similar to that of Three Rivers Stadium in Pittsburgh. The crew used a sod cutter to slice out an 18-x-18-inch square at angles to the pitcher's mound first, from the pitcher's mound to second, and from the pitcher's mound to third to make up the diamond look. They rebuilt the mound and home plate area, again measuring precisely and shaping with native soil. Then they topped off these skinned areas and bullpens with a fine red crushed brick dust and sand mixtures, which has the look of Georgia clay. They set the Hollywood bases next for first, second, and third. There are no ridges, only smooth and even grass lines.

The skinned areas are now practical, as well as aesthetically pleasing. "We can walk across the skinned areas after a downpour of rain with no mix sticking to the bottoms of our shoes," Thompson enthuses. "A quick raking gets the areas back in playable condition. We only had one cancellation in the 1992-1993 season, and that was because of an all-day rain that continued through game time.

"Prior to renovation, the field had a dirt perimeter with a grassed infield," he continues. "It took a tractor, rakes, and topdressing sand to get the skinned area ready for play prior to each game. Because our home-team players had to pitch in on the pre-game maintenance, the visiting team players, who started the game fresh, had a definite advantage. Now, it's 'rake and play,' or even easier when the skinned sections are tarped."

The white limestone that always tracked into the dugouts and onto the field was removed. Cement was poured in its place and artificial turf was placed on top. Artificial turf also replaced the rock in the on-deck circles.

Thompson extends special thanks to Vo-Ag teacher Jim Henline and his class, who have pitched in to help with various

projects, and to team mothers and fathers, boosters, alumni, players, and other volunteers who showed up in force to tackle the "grunt work," such as removing the sod cut away from the mound, home-plate, and base areas. The entire community wants its kids to play on a Class A program field. With such an outflow of volunteers at all stages of the renovation, labors costs were low. And, because the whole community considers it "their" field, there's been no more graffiti.

Maintenance Routine

The 1992-1993 season was the first year for play on the renovated field. The spring season opens as soon in early March as the weather permits, and play continues throughout August. There are approximately 50 baseball games played during this period. Once school gets back in full swing in the fall, Thompson and staff begin preparing the field for winter.

After the first year of play on the young field and a record bad winter, snow mold appeared at the start of the season. Spot fungicide treatments cleared it up quickly.

Thompson has adopted a fertilization program based on the results of an annual soil test. The first season

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